TECHNICAL COMMENTARY

NeuRA
Discover. Conquer. Cure.
POST-TRAUMATIC STRESS DISORDER LIBRARY

Group therapies

Introduction

Group therapy refers to any psychosocial therapy that is administered in a group setting. Group therapy offers the opportunity to redevelop trusting relationships, and a sense of interpersonal safety. The experience that others share similar problems helps to validate traumatic experiences and to normalise trauma responses. Trauma-focused groups integrate memories of the trauma into the therapeutic process to modify the meaning of the trauma for the individual, while non-trauma-focused groups concentrate more on the impact of the trauma on current life issues and behaviours.

Method

We have included only systematic reviews (systematic literature search, detailed methodology with inclusion/exclusion criteria) published in full text, in English, from the year 2010 that report results separately for people with PTSD. Reviews were identified by searching the databases MEDLINE, EMBASE, and PsycINFO. When multiple copies of review topics were found, only the most recent and comprehensive version was included. We prioritised reviews with pooled data for inclusion.

Review reporting assessment was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist that describes a preferred way to present a meta-analysis[1]. Reviews with less than 50% of items checked have been excluded from the library. Note that early reviews may have been guided by less stringent reporting checklists than the PRISMA, and that some reviews may have been limited by journal guidelines.

Evidence was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach where high quality evidence such as that gained from randomised controlled trials (RCTs) may be downgraded to moderate or low if review and study quality is limited, if there is inconsistency in results, indirect comparisons, imprecise or sparse data and high probability of reporting bias. It may also be downgraded if risks associated with the intervention or other matter under review are high. Conversely, low quality evidence such as that gained from observational studies may be upgraded if effect sizes are large or if there is a dose dependent response. We have also taken into account sample size and whether results are consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)[2]. The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found two systematic reviews that met our inclusion criteria[3, 4].

- Moderate quality evidence found large improvements in PTSD symptoms with group psychotherapy (mostly CBT), with similar effects found with or without the addition of in-group exposure techniques.
- Moderate quality evidence found medium-sized improvements in PTSD, anxiety, and depression symptoms following group psychotherapy compared to waitlist/no treatment. This effect was slightly reduced but maintained for up to 6 months post-treatment. There was also more remission with group psychotherapy compared to no treatment. Females and non-combat trauma samples showed the largest improvements with group psychotherapy. There were no differences in PTSD symptoms when group psychotherapy was compared to non-group active treatments.

Margarete Ainsworth Building, Barker Street, Randwick NSW 2031. Phone: 02 9399 1000. Email: info@neura.edu.au

Barrera TL, Mott JM, Hofstein RF, Teng EJ

A meta-analytic review of exposure in group cognitive behavioural therapy for posttraumatic stress disorder

Clinical Psychology Review 2013; 33: 24-32

View review abstract online

Comparison	**Effectiveness of group CBT with exposure (varying types) vs. group CBT without exposure.**
Summary of evidence	**Moderate quality evidence (large sample, inconsistent, imprecise, direct) found a large improvement in PTSD symptoms with group CBT, with similar effects with or without in-group exposure. Effect sizes were larger in non-veteran vs. veteran populations.**

PTSD symptoms

A large effect showed group CBT was effective at reducing PTSD symptoms pre-post treatment;

12 studies, N = 651, ES = 1.13, 95%CI 0.69 to 1.56, $p < 0.001$, Q$p < 0.001$

Gains were maintained at follow-up.

There were no differences in the effect sizes for group CBT with exposure and group CBT without exposure, suggesting no adverse effects of in-group exposure;

In-group exposure: 5 studies, ES = 1.16, 95%CI 0.47 to 1.85, $p < 0.05$

No in-group exposure: 7 studies, ES = 1.11, 95%CI 0.55 to 1.66, $p < 0.05$

Effect sizes were larger in non-veteran vs. veteran samples.

There were no moderating effects of publication year, analysis type, and treatment dose.

Risks	The attrition rate was higher with in-group exposure.
Consistency in results‡	Inconsistent
Precision in results§	Imprecise
Directness of results‖	Direct

Schwartze D, Barkowski S, Strauss B, Knaevelsrud C, Rosendahl J

Efficacy of group psychotherapy for posttraumatic stress disorder: Systematic review and meta-analysis of randomized controlled trials

Margarete Ainsworth Building, Barker Street, Randwick NSW 2031. Phone: 02 9399 1000. Email: info@neura.edu.au

Psychotherapy Research 2019; 29: 415-31 View review abstract online	
Comparison	**Effectiveness of group psychotherapy (mostly group CBT) vs. waitlist/no treatment or a non-group active treatment (treatment as usual, other psychosocial interventions).**
Summary of evidence	**Moderate quality evidence (large samples, mostly inconsistent, precise, indirect) found medium-sized improvements in PTSD, anxiety, and depression symptoms following group psychotherapy compared to no treatment. This effect was slightly reduced but maintained for up to 6 months post-treatment. There was also more remission with group psychotherapy compared to no treatment. Females and non-combat trauma samples showed the largest improvements following group psychotherapy. There were no differences in PTSD symptoms when group psychotherapy was compared to other active treatments.**
PTSD symptoms	
Medium-sized effects showed improved PTSD, anxiety, and depression symptoms, and more PTSD remission with group psychotherapy compared to waitlist/no-treatment controls; PTSD symptoms: 13 RCTs, N = 680, g = 0.70, 95%CI 0.41 to 0.99, $p < 0.05$, I^2 = 60% Anxiety symptoms: 5 RCTs, N = 308, g = 0.53, 95%CI 0.17 to 0.88, $p < 0.05$, I^2 = 40% Depression symptoms: 7 RCTs, N = 409, g = 0.61, 95%CI 0.14 to 1.08, $p < 0.05$, I^2 = 74% Remission: 5 RCTs, N = 177, g = 0.59, 95%CI 0.28 to 0.91, $p < 0.05$, I^2 = 0% The effect for PTSD symptoms was reduced but significant at 3-6 months follow-up (g = 0.41). The effect was smaller in studies with vs. without a concurrent treatment in both groups. There were no significant differences in PTSD symptoms, depression symptoms, or remission between group psychotherapy and active treatments. *Pre-post treatment analysis showed a large effect for improved PTSD symptoms;* 21 RCTs, N = 2,244, g = 0.89, 95%CI 0.69 to 1.08, $p < 0.001$, I^2 = 91% Moderator analyses of pre-post data showed studies with only male participants, combat trauma samples, or completer analyses yielded lower effect sizes than studies with only female participants, interpersonal or mixed trauma samples, or intent-to-treat analyses.	
Risks	The attrition rate was higher with group psychotherapy than with no treatment or active controls.
Consistency in results	Mostly inconsistent
Precision in results	Precise
Directness of results	Indirect; mixed treatment conditions (not all CBT).

Explanation of acronyms

CBT = cognitive behavioural therapy, CI = confidence interval, ES = effect size, standardised mean change score, *g* = Hedges' standardised mean difference, I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), N = number of participants, *p* = probability of obtaining the result by chance, Q = test for heterogeneity, RCT = randomised controlled trial, vs. = versus

Margarete Ainsworth Building, Barker Street, Randwick NSW 2031. Phone: 02 9399 1000. Email: info@neura.edu.au

Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; reporting bias – selective reporting of results; publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small[5].

---

† Different effect measures are reported by different reviews.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified (100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive if they are truly not).

Weighted mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre to post treatment) and in a randomised trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. Less than 0.4 represents a small effect, around 0.5 a medium effect, and over 0.8 represents a large effect[5].

Odds ratio (OR) or relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, a RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. A RR or OR of 1.00 means there is no difference between groups. A medium effect is considered if RR > 2 or < 0.5 and a large effect if RR > 5 or < 0.2[6]. lnOR stands for logarithmic OR where a lnOR of 0 shows no difference between groups. Hazard ratios measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients (eg, r) indicate the strength of association or relationship

between variables. They can provide an indirect indication of prediction, but do not confirm causality due to possible and often unforseen confounding variables. An r of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (*b*) regression coefficients indicate the average change in the dependent variable associated with a 1 unit change in the independent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change being in units of standard deviations to allow comparison across different scales.

‡ Inconsistency refers to differing estimates of effect across studies (i.e. heterogeneity or variability in results) that is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may represent considerable heterogeneity and over this is considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula[5];

$$I^2 = \left(\frac{Q - df}{Q}\right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence limit crosses an effect size of 0.5 in either direction, and for binary and correlation data, an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, these criteria should be relaxed[7].

‖ Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and/or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available and is therefore inferred from available evidence. These inferred treatment effect sizes are of lower quality than those gained from head-to-head comparisons of A and B.

Margarete Ainsworth Building, Barker Street, Randwick NSW 2031. Phone: 02 9399 1000. Email: info@neura.edu.au

References

1. Moher D, Liberati A, Tetzlaff J, Altman DG, PRISMAGroup (2009): Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *British Medical Journal* 151: 264-9.
2. GRADEWorkingGroup (2004): Grading quality of evidence and strength of recommendations. *British Medical Journal* 328: 1490.
3. Barrera TL, Mott JM, Hofstein RF, Teng EJ (2013): A meta-analytic review of exposure in group cognitive behavioral therapy for posttraumatic stress disorder. *Clinical Psychology Review* 33: 24-32.
4. Schwartze D, Barkowski S, Strauss B, Knaevelsrud C, Rosendahl J (2019): Efficacy of group psychotherapy for posttraumatic stress disorder: Systematic review and meta-analysis of randomized controlled trials. *Psychotherapy Research* 29: 415-31.
5. CochraneCollaboration (2008): Cochrane Handbook for Systematic Reviews of Interventions. Accessed 24/06/2011.
6. Rosenthal JA (1996): Qualitative Descriptors of Strength of Association and Effect Size. *Journal of Social Service Research* 21: 37-59.
7. GRADEpro (2008): [Computer program]. Jan Brozek, Andrew Oxman, Holger Schünemann. *Version 32 for Windows*